

CITY OF MILPITAS
Effective: June 1985
Revised: October 2007
EEOC: Professional
FLSA: Non-exempt
Unit: Protech
Physical: 6

JUNIOR/ASSISTANT CIVIL ENGINEER

DEFINITION

To perform professional and technical engineering work in assigned area of responsibility including, but not limited to utility design, land development, building renovation, traffic engineering.

DISTINGUISHING CHARACTERISTICS

Junior Civil Engineer - This is the entry-level class in the professional engineering series. Positions in this class possess the applicable educational and training background required of classes in the professional engineering series, yet typically lack practical work experience.

The Junior Civil Engineer class is distinguished from the Assistant Civil Engineer by the performance of less than the full range of duties as assigned to the journey level class within this series. This class is typically used as a training class in that incumbents may have only limited or no directly related work experience. Incumbents work under immediate supervision while learning job tasks.

Assistant Civil Engineer - This is the journey level class in the professional engineering series. Positions in this class possess the applicable educational and training background required for classes in the professional engineering series, as well as practical work experience.

The Assistant Civil Engineer is distinguished from the Junior Civil Engineer by the performance of the full range of duties as assigned with only minimal instruction or assistance. Incumbents work independently, seeking assistance only as new or unusual situations arise. Positions in this class are flexibly staffed and are normally filled by advancement from the Junior Civil Engineer class.

SUPERVISION RECEIVED AND EXERCISED

Junior Civil Engineer

Receives immediate supervision from a higher-level professional engineer. May receive functional or technical supervision from other division staff.

May exercise technical or functional supervisor over technical staff within engineering division.

May exercise project-related supervision over construction inspection staff within the engineering division.

Assistant Civil Engineer

Receives general supervision from a higher-level professional engineer.

May exercise indirect supervision over positions at the Junior Civil Engineer level and/or technical staff.

May exercise project-related supervision over construction inspection staff within the engineering division.

EXAMPLES OF DUTIES - Duties may include, but are not limited to, the following:

Perform professional and technical engineering work relative to projects assigned, including but not limited to land development, building renovation, traffic engineering, and/or utility engineering.

Respond to question from contractors, developers, construction inspection staff, and the general public related to assigned area of responsibility.

Design, prepare, and/or review plans and specifications for public works projects including pumping stations, streets, storm drains, sewer lines, building renovation, and related projects.

Research project design requirements; perform calculations and prepare estimates of time and material costs.

Investigate field problems affecting property owners, contractors, and maintenance operations; resolve problems or refer as appropriate.

Request and/or participate in the collection of survey and mapping data.

Prepare estimates and feasibility reports for new or modified services and structures.

Participate in the plan check, review, and processing of plans for private developments affecting city streets, sewers, drains and related public works facilities; assure compliance with appropriate codes, ordinances, rules and regulations.

Coordinate, develop and administer special assessment districts relative to the provision of public works improvements and services; meet with affected parties and explain the process, purpose and procedures.

Assume responsibility for land and easement acquisition.

Participate in and conduct traffic related studies and surveys; collect and compile relevant data including information on accidents, traffic flows, signalization, and other related statistics.

Prepare visual presentations and reports.

Review design/construction plans and specifications and recommend approval for construction.

Administer the advertisement and bidding of public works projects.

Participate in the projection of sewerage capacity including estimating future sewer discharge and water consumption.

Check developments for water and sewer Master Plan conformance.

Prepare special engineering studies and reports.

Coordinate public works activities with other City departments, divisions and sections and with outside agencies.

Operate computer system as assigned including data entry and output; development of programs, troubleshooting and up-dating current systems; coordinate activities with data processing.

Contract with, and manage, professional engineering consultants.

Manage public works construction projects from design through completion of construction.

Perform related duties as assigned.

QUALIFICATIONS

Junior Civil Engineer

Knowledge of:

Principles and practices of engineering as applied to public works, utilities, building renovation, transportation, or land development.

Applicable laws and regulatory codes relevant to assigned area of responsibility.

Methods, materials, tools and equipment used in engineering construction.

Principles of algebra, geometry and trigonometry and their application to engineering.

Ability to:

Prepare plans and drawings neatly and accurately.

Make engineering design computations and check, design, and prepare engineering plans and studies.

Learn and understand City engineering policies and procedures.

Learn applicable laws and regulatory codes applicable to areas of assigned responsibility.

Communicate effectively, orally and in writing.

Perform civil engineering computations, including but not limited to: surveying, open channel flow, pressure pipe, flexible pavement design, traffic design, and building seismic improvements.

Prepare reports encompassing raw technical data; make effective cost estimates and recommendations.

Establish and maintain effective working relationships with City staff, developers, contractors, engineers, construction inspectors, and the general public.

EXPERIENCE AND EDUCATION

A Bachelor of Science degree from an accredited college or university in civil engineering.

License or Certificate

Possess and maintain throughout employment an appropriate, valid California Driver's License.

Assistant Civil Engineer

In addition to the knowledge and abilities requirements for the Junior Civil Engineer:

Knowledge of:

Applicable laws and regulatory codes relevant to assigned area of responsibility.

Methods, materials, and techniques used in the construction of public works, building renovation, and utilities projects.

Modern standards of alignment, grade, and compaction of streets.

Topographic and construction surveying.

Requirements for protecting and improving buildings designated as historical structures.

Strengths, properties and uses of engineering construction materials.

Property acquisition process and street vacation process.

Ability to:

Read and interpret engineering maps and survey documents.

Design common engineering structures and facilities.

Use drafting and surveying instruments to prepare maps, plans, cross-sections and profiles.

Prepare quantity take-offs and cost estimates.

EXPERIENCE AND TRAINING

Experience:

Two years of responsible civil engineering experience comparable to that of a Junior Civil Engineer in the City of Milpitas.

License or Certificate

In addition to the License or Certificate requirements for the Junior Civil Engineer: Possess and maintain throughout employment an appropriate, valid California Driver's License.

Special Physical Requirements

Essential duties require the following physical abilities and work environment:

Typically, work is performed primarily in an office environment and at construction sites; exposure to outdoor elements; extensive use of the telephone, radios, and computers with repetitive keyboarding; ability to walk on uneven ground; reach (including overhead), squat, bend, lift, crawl, and, climb; push, pull, and carry up to 30 lbs; drive to various locations daily within and outside the City of Milpitas; ability to work safely in a hard-hat construction zone is essential; exposure to construction-related chemicals and products; may be required to crawl in confined spaces.

Approved by:

City Manager

Date

Human Resources Director

Date

Addendum 1: Traffic Engineering

DEFINITION

A Jr/Assistant Civil Engineer assigned to the Traffic Engineering Division working under general supervision, performs a variety of technical field and office traffic engineering support duties including design, drafting, collection & analysis of traffic engineering data, deployment of substantially heavy traffic data collection equipment, and investigation of requests for traffic controls.

EXAMPLES OF DUTIES: Duties may include, but are not limited to, the following:

Performs professional and technical engineering work relative to traffic engineering projects including design, drafting, the collection & analysis of traffic engineering data and investigation of requests for traffic controls.

Design, prepare and/or review plans and specifications for street improvement projects

Participate in and conduct traffic related studies and surveys; collect and compile relevant data including information on accidents, traffic flows, signalization, and other related statistics.